

# Chapter XIII

## Current Status of Mobile Wireless Technology and Digital Multimedia Broadcasting\*

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### ABSTRACT

*The purpose of this chapter is to present an overview of wireless mobile technology, its applications, with a focus on digital multimedia broadcasting (DMB) technology. The chapter also explores the research methodology regarding users' perception on DMB cellular phones and presents empirical findings. Implications for future research are presented. The report attempts to provide stimulating answers by investigating the following questions: (1) Do users perceive easy access to DMB applications as a satisfactory service offered by DMB service providers? (2) Do users perceive high-quality DMB program content as a satisfactory service offered by the DMB service providers? (3) Are there differences between different age groups in terms of their perception of DMB phone prices, phone usage time, program content, and services?*

### INTRODUCTION

Wireless mobile technology and handheld devices are dramatically changing the degrees of interaction throughout the world, further creating a ubiquitous network society. The emergence of

these wireless devices has increased accuracy, ease-of-use, and access rate, all of which is increasingly essential as the volume of information handled by users expands at an accelerated pace. Mobile TV broadcasting technology, as a nascent industry, has been paving a new way to create

an intersection of telecommunication and media industries, all of which offers new opportunities to device makers, content producers, and mobile network operators.

There are currently various wireless connectivity standards (e.g., Wi-Fi, Bluetooth, Radio Frequency Identification [RFID], etc.), which have been expanding across all vertical industries, in an era of mobile and ubiquitous computing, which provides access to anything, anytime, and anywhere. Mobile TV technologies have been creating a buzz, as it adds a new dimension to the “on the go” mobility factor—simultaneous audio and video services are broadcasted in real-time to mobile devices in motion, such as mobile TV-enabled phones, PDAs, and car receivers.

There are currently three major competing standards: digital video broadcasting for handhelds (DVB-H), which is going through trial phases in Europe; digital multimedia broadcasting (DMB), which has been adopted in South Korea and Japan; and MediaFLO (QUALCOMM Inc., 2005), which is currently in trial phase in the United States with plans to launch by late 2007. The competition scheme is further intensified given the challenge of how quickly terrestrial and satellite DMB can be deployed and commercialized throughout countries such as Korea, Japan, and Europe. Additionally, there is pressure to recoup the costs with creating the network and catapult the technology to the ranks of industry standard.

The purpose of this chapter is to present an overview of wireless mobile technology, its applications, with a focus on DMB technology. The chapter also explores the research methodology regarding users’ perception on DMB cellular phones and presents empirical findings from Study Phases I and II, along with actual DMB subscriber usage results. Implications for future research are presented.

Given that the research topic of DMB has not yet been covered extensively, the use of qualitative methods is considered advantageous

when exploring the topic to develop theoretical variables, which may then be employed in quantitative research. Thus, with the difference found between the DMB cellular phone usage experience and traditional cellular phone usage, qualitative methodology was applied to Study Phase I. The project was then triangulated by the use of quantitative methodology in Study Phase II to develop an additional understanding of the DMB cellular phone users’ experiences as identified in Study Phase I.

The report attempts to provide stimulating answers by investigating the following questions: (1) Do users perceive easy access to DMB applications as a satisfactory service offered by DMB service providers? (2) Do users perceive high-quality DMB program contents as a satisfactory service offered by the DMB service providers? (3) Are there differences between different age groups in terms of their perception of DMB phone prices, phone usage time, program contents, and services?

## **WIRELESS MOBILE TECHNOLOGIES: CURRENT STATUS AND CONCEPTS**

Over the last decade, wireless technologies have attracted unprecedented attention from wireless service providers, developers, vendors, and users. These wireless technologies provide many connection points to the Internet between mobile phones and other portable handheld devices to earpieces and handsets. These technologies include Wi-Fi hotspots, Bluetooth, WiMAX, wireless broadband Internet (WiBro), RFID, and others. Wi-Fi hotspots, with a distance and penetration of approximately 50 feet, are physical addresses where people can connect to a public wireless network, such as a cafe, hotel, or airport. WiMAX is a metropolitan-scale wireless technology with speeds over 1Mbps and a longer range than Wi-Fi. WiBro, the Korean version of WiMAX, allows

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